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09/729,248	12/05/2000	Jong Jin Lee	2336-057	4718

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LOWE HAUPTMAN GOPSTEIN GILMAN & BERNER, LLP  
1700 Diagonal Road, Suite 310  
Alexandria, VA 22314

EXAMINER

LAMBRECHT, CHRISTOPHER M

ART UNIT PAPER NUMBER

2611

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/729,248

Applicant(s)

LEE, JONG JIN

Examiner

Christopher M Lambrecht

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/4/2004</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 2 and 5** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,638,112 to Bestler et al. (hereinafter “Bestler”).

With regard to **claim 1**, Bestler discloses a channel module apparatus for a cable set-top box (see figure), comprising:

a switching block (diplex 10 & splitter 12) for distributing a signal received via a cable (8, col. 1, ll. 55-60) to two or more stages (tuner 14 and mux 58) and mixing (at 58, fig. 1) one of the distributed signals with a radio frequency-modulated signal (from 56, fig. 1, col. 3, ll. 25-29);

a tuner block (14) for tuning to an output signal from said switching block (10 & 12, col. 2, ll. 3-9);

a channel demodulation block (34, fig. 1) for demodulating an output signal from said tuner block (14, via 22 and 32, fig. 1) into an audio and video signals (col. 2, ll. 30-41); and

a radio frequency modulation block (56) for modulating the audio and video signals from said demodulation block (34, via 36, 40, 62, 64, 70, 76, 80, and 82, fig. 1) into a television signal (col. 3, ll. 15-23).

As for **claim 2**, Bestler discloses the channel module apparatus as set forth in claim 1, wherein said switching block (12), radio frequency modulation block (56), tuner block (14) and channel

Art Unit: 2611

demodulation block (34) are contained in a single chassis in the form of one package (i.e., hybrid analog/digital STB, col. 1, ll. 54-55).

With regard to **claim 5**, Bestler discloses a channel module apparatus for a cable set-top box (see figure), comprising:

a switching block (duplex 10 & splitter 12) for distributing a signal received via a cable (8, col. 1, ll. 55-60) to two or more stages (tuner 14 and mux 58) and mixing (at 58, fig. 1) one of the distributed signals with a radio frequency-modulated signal (from 56, fig. 1, col. 3, ll. 25-29);

a tuner block (14) for tuning to an output signal from said switching block (10 & 12, col. 2, ll. 3-9);

a channel demodulation block (34, fig. 1) for demodulating an output signal from said tuner block (14, via 22 and 32, fig. 1) into an audio and video signals (col. 2, ll. 30-41); and

a radio frequency modulation block (56) for modulating the audio and video signals from said demodulation block (34, via 36, 40, 62, 64, 70, 76, 80, and 82, fig. 1) into a television signal (col. 3, ll. 15-23);

said switching block (12), radio frequency modulation block (56), tuner block (14) and channel demodulation block (34) are contained in a single chassis in the form of one package (i.e., hybrid analog/digital STB, col. 1, ll. 54-55).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2611

4. **Claims 3 and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bestler in view of Applicant's admitted prior art in figure 1 of the instant application (hereinafter "Applicant's admitted prior art").

As for **claim 3**, Bestler discloses the channel module apparatus as set forth in claim 1, wherein said switching block (10 & 12) includes:

a radio frequency input connector provided for connection to said cable (8, where the STB is coupled to a radio frequency transmission medium such as a coaxial cable plant, col. 1, ll. 55-60, a radio frequency input connector is inherently present);

a first signal distributor (diplex 10) for distributing a signal received via said radio frequency input connector and transferring a signal transmitted from a cable modem tuner (upstream encoder modulator 16) to said radio frequency input connector (associated with cable 8, col. 1, ll. 64-66);

a diplexer (10);

a second signal distributor (12) for distributing an output signal from said diplexer (10) to two stages (14 & 58);

a tuner connection terminal for transferring one signal distributed by said second signal distributor (12) to said tuner block (14; where splitter 12 and tuner 14 are coupled as illustrated in the figure, there inherently exists a connection terminal for transferring a signal between the two devices); and

a mixer (58) for mixing the other signal distributed by said second signal distributor (12) with an output signal from said radio frequency modulation block (56, col. 3, ll. 25-29), and

a radio frequency output (output of mux 58, see figure) for transmitting an output signal from said mixer (58).

Bestler fails to disclose said switching block (10 & 12) includes: signal distributor for distributing a signal to two stages; a first cable connector for transmitting one signal distributed by said first signal

Art Unit: 2611

distributor to said cable modem tuner and an output signal from said cable modem tuner to said first signal distributor, respectively; a high pass filter for blocking low frequency components of the other signal distributed by said first signal distributor and passing high-frequency components thereof; and a radio frequency output connector for transmitting an output signal from said mixer to a television.

Applicant's admitted prior art discloses a switching block (fig.1) including a first signal distributor for distributing a signal to two stages and first cable connector (where the cable modem tuner is coupled to the signal distributor, a cable connector is inherently present) for transmitting one signal distributed by said first signal distributor (11) to said cable modem tuner (17) and an output signal from said cable modem tuner (17) to said first signal distributor (11), respectively. This connector enables communication between the cable plant and the cable modem tuner.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the signal distributor of Bestler to include a first cable connector for transmitting one signal distributed by said first signal distributor to said cable modem tuner and an output signal from said cable modem tuner to said first signal distributor, respectively, as taught by Applicant's admitted prior art, for the purpose of enabling communication between the cable modem tuner and the cable plant. Bestler and Applicant's admitted prior art fail to disclose said switching block includes a high pass filter for blocking low frequency components of the other signal distributed by said first signal distributor and passing high-frequency components thereof; and a radio frequency output connector for transmitting an output signal from said mixer to a television.

In an analogous art, Burns discloses a diplexer (334, fig. 3) including a high pass filter for blocking low frequency components of the other signal distributed by said first signal distributor and passing high-frequency components thereof (col. 7, ll. 1-5). Diplexers are well known in the art for reducing interference between transmit and receive equipment.

Consequently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bestler and Applicant's admitted prior art to include a high pass filter for blocking low frequency components of the other signal distributed by said first signal distributor and passing high-frequency components thereof, as taught by Burns, for the purpose of minimizing interference between the transmit and receive equipment within the set-top terminal. Bestler, Applicant's admitted prior art and Burns fail to disclose a radio frequency output connector for transmitting an output signal from said mixer to a television.

Official notice is taken of the fact that it is well known in the art to provide a radio frequency connector at the radio frequency output of a set-top box for transmitting an output signal to a television, for the purpose of providing an operable connection between the set-top box and the television, enabling the consumption of television programming.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bestler, Applicant's admitted prior art and Burns to include a radio frequency output connector for transmitting an output signal from said mixer to a television, for the purpose of enabling the consumption of television programming.

With regard to **claim 4**, Bestler, Applicant's admitted prior art, and Burns together disclose the channel module as set forth in claim 3. However, they fail, to disclose said switching block further includes:

a first amplifier enabled in response to a booster voltage for amplifying the output signal from said high pass filter and transferring the amplified signal to said second signal distributor; and

a second amplifier enabled in response to said booster voltage for amplifying the other signal distributed by said second signal distributor and transferring the amplified signal to said mixer.

Official notice is taken of the fact that it is well known in the art to amplify a signal following a signal distribution device (such as a splitter), for the purpose of recovering power losses that occur when a signal is split into multiple branches of a circuit. Additionally, Official notice is taken of the fact that it is well known in the art to enable an amplifier to amplify a signal in response to an enable signal (such as a booster voltage), for the purpose of providing control over the amplification of the signal to be amplified.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching block of Bestler, Applicant's admitted prior art, and Burns to further include a first amplifier enabled in response to a booster voltage for amplifying the output signal from said high pass filter and transferring the amplified signal to said second signal distributor; and a second amplifier enabled in response to said booster voltage for amplifying the other signal distributed by said second signal distributor and transferring the amplified signal to said mixer, for the purpose of recovering power losses that occur when said signals are split, and enabling electronic control of each of said amplifiers.

5. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bestler in view of Applicant's admitted prior art.

With regard to **claim 6**, Bestler discloses a channel module apparatus for a cable set-top box (see figure), comprising:

a radio frequency modulation block (56) for modulating audio and video signals into a television signal (col. 3, ll. 15-23); and

a switching block (diplex 10 & splitter 12) for distributing a signal received via a radio frequency input connector (8, where the STB is coupled to a radio frequency transmission medium such as a coaxial cable plant, col. 1, ll. 55-60, a radio frequency input connector is inherently present) to a tuner connection terminal (where splitter 12 and tuner 14 are coupled as illustrated in the figure, there inherently exists a



Art Unit: 2611

connection terminal for transferring a signal between the two devices), mixing the received signal with a radio frequency-modulated signal and outputting the resulting signal (col. 3, ll. 15-29);

said radio frequency modulation block and switching block being contained in a single chassis in the form of one package (i.e., hybrid analog/digital STB, col. 1, ll. 54-55).

Bestler fails to disclose said switching block distributes a signal to a first cable connector; and outputting said resulting signal via a radio frequency output connector.

Applicant's admitted prior art discloses a switching block (fig.1) including a first cable connector (where the cable modem tuner is coupled to the signal distributor, a cable connector is inherently present) for transmitting one signal distributed by said first signal distributor (11) to said cable modem tuner (17) and an output signal from said cable modem tuner (17) to said first signal distributor (11), respectively. This connector enables communication between the cable plant and the cable modem tuner.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the signal distributor of Bestler to include a first cable connector for transmitting one signal distributed by said first signal distributor to said cable modem tuner and an output signal from said cable modem tuner to said first signal distributor, respectively, as taught by Applicant's admitted prior art, for the purpose of enabling communication between the cable modem tuner and the cable plant. Bestler and Applicant's admitted prior art fail to disclose said switching block includes a high pass filter for blocking low frequency components of the other signal distributed by said first signal distributor and passing high-frequency components thereof; and a radio frequency output connector for transmitting an output signal from said mixer to a television. Bestler and Applicant's admitted prior art fail to disclose outputting said resulting signal via a radio frequency connector.

Official notice is taken of the fact that it is well known in the art to provide a radio frequency connector at the radio frequency output of a set-top box for transmitting an output signal to a television,

Art Unit: 2611

for the purpose of providing an operable connection between the set-top box and the television, enabling the consumption of television programming.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bestler and Applicant's admitted prior art to include a radio frequency output connector for transmitting an output signal from said mixer to a television, for the purpose of enabling the consumption of television programming.

6. **Claims 7 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bestler and Applicant's admitted prior art as applied to claim 6 above, and further in view of Burns.

With regard to **claim 7**, Bestler and Applicant's admitted prior art together disclose the channel module apparatus as set forth in claim 6, wherein said switching block includes:

said radio frequency input connector provided for connection to a cable (8, Bestler, col. 1, ll. 55-60);

a first signal distributor (diplexer 10, Bestler) for distributing the signal received via said radio frequency input connector to two stages (cable modem tuner 17 and HPF 12 or 13, see Applicant's admitted prior art, fig. 1) and transferring a signal transmitted from a cable modem tuner (upstream encoder modulator 16, Bestler) to said radio frequency input connector (associated with cable 8, Bestler, col. 1, ll. 64-66);

said first cable connector adapted for transmitting one signal distributed by said first signal distributor to said cable modem tuner and an output signal from said cable modem tuner to said first signal distributor, respectively (see rejection of claim 6, above);

a diplexer (10, Bestler);

a second signal distributor (splitter 12, Bestler) for distributing an output signal from said diplexer (10, Bestler) to two stages (14 and 58, Bestler);

Art Unit: 2611

said tuner connection terminal adapted for transferring one signal distributed by said second signal distributor (12, Bestler) to an internal tuner block (14, where tuner 14 is internal to the set-top box shown in the figure, Bestler); and

a mixer (58, Bestler) for mixing the other signal distributed by said second signal distributor (12, Bestler) with an output signal from said radio frequency modulation block (56, Bestler).

Bestler and Applicant's admitted prior art fail to disclose a high pass filter for blocking low-frequency components of the other signal distributed by said first signal distributor and passing high-frequency components thereof; and said radio frequency output connector adapted for transmitting an output signal from said mixer to a television.

In an analogous art, Burns discloses a diplexer (334, fig. 3) including a high pass filter for blocking low frequency components of the other signal distributed by said first signal distributor and passing high-frequency components thereof (col. 7, ll. 1-5). Diplexers are well known in the art for reducing interference between transmit and receive equipment.

Consequently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bestler and Applicant's admitted prior art to include a high pass filter for blocking low frequency components of the other signal distributed by said first signal distributor and passing high-frequency components thereof, as taught by Burns, for the purpose of minimizing interference between the transmit and receive equipment within the set-top terminal. Bestler, Applicant's admitted prior art and Burns fail to disclose said radio frequency output connector adapted for transmitting an output signal from said mixer to a television.

Official notice is taken of the fact that it is well known in the art to provide a radio frequency connector at the radio frequency output of a set-top box for transmitting an output signal to a television, for the purpose of providing an operable connection between the set-top box and the television, enabling the consumption of television programming.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bestler, Applicant's admitted prior art and Burns to include a radio frequency output connector for transmitting an output signal from said mixer to a television, for the purpose of enabling the consumption of television programming.

With regard to **claim 8**, Bestler, Applicant's admitted prior art, and Burns together disclose the channel module as set forth in claim 7. However, they fail, to disclose said switching block further includes:

a first amplifier enabled in response to a booster voltage for amplifying the output signal from said high pass filter and transferring the amplified signal to said second signal distributor; and

a second amplifier enabled in response to said booster voltage for amplifying the other signal distributed by said second signal distributor and transferring the amplified signal to said mixer.

Official notice is taken of the fact that it is well known in the art to amplify a signal following a signal distribution device (such as a splitter), for the purpose of recovering power losses that occur when a signal is split into multiple branches of a circuit. Additionally, Official notice is taken of the fact that it is well known in the art to enable an amplifier to amplify a signal in response to an enable signal (such as a booster voltage), for the purpose of providing control over the amplification of the signal to be amplified.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching block of Bestler, Applicant's admitted prior art, and Burns to further include a first amplifier enabled in response to a booster voltage for amplifying the output signal from said high pass filter and transferring the amplified signal to said second signal distributor; and a second amplifier enabled in response to said booster voltage for amplifying the other signal distributed by said second signal distributor and transferring the amplified signal to said mixer, for the purpose of recovering

Art Unit: 2611

power losses that occur when said signals are split, and enabling electronic control of each of said amplifiers.

### ***Conclusion***

7. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

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Art Unit: 2611

Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

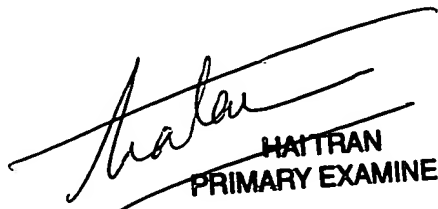
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M Lambrecht whose telephone number is (703) 305-8710. The examiner can normally be reached from 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Grant can be reached at (703) 305-4755. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher M Lambrecht  
Examiner  
Art Unit 2611

CML

  
HAITRAN  
PRIMARY EXAMINER